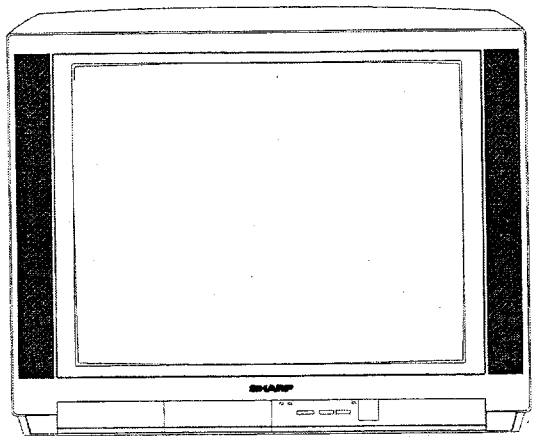
SHARP SERVICE MANUAL

SEMS70ES03S//

CA10- CHASSIS



PAL SYSTEM COLOUR TELEVISION

MODEL 70ES-03S

In order to service model 70ES-03S, refer to the previously issued Service Manual for model 70DS-03S. This manual only contains the differences beween the above mentioned models.

In the interests of user-safety (required by safety regulations in some countries) the set should be restored to its original condition amd only parts identical to those specified should be used.

CONTENTS

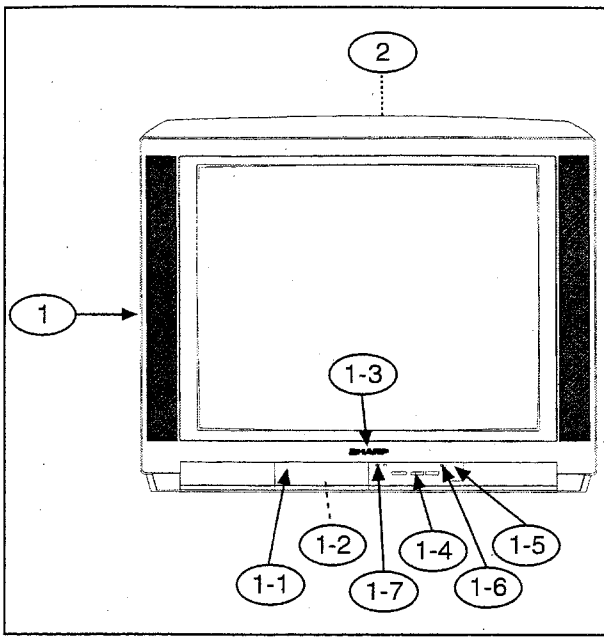
● PARTS LIST 2

SHARP CORPORATION

70ES-03S

The difference between the previous model 70DS-03S and the current model 70ES-03S, is only the cabinet.

PARTS LIST (Only contains the differences)



REF. NO.	PARTS	★	DESCRIPTION	CODE
			MISCELLANEOUS PARTS	
	TINS-6590BMN0	S	Operation Manual	AS
			CABINET PARTS	
1	CCABA1232BMV0	S	Front Cabinet	
1-1	GDORF1053BMSA	S	Door	AD
1-2	PKAI-1083BM00	S	Door Latch	AF
1-3	HBDGB3013MESB	S	Badge SHARP	AH
1-4	JBTN-1053BMSA	S	Button Up/Down	AC
1-5	JBTN-1052BMSA	S	Button Power	AC
1-6	HDECQ0042BMSA	S	Window Power	AC
1-7	HDECQ0041BMSA	S	Window	AC
2	CCABB1083BMV0	S	Rear Cabinet	BB

SHARP

RECICLED PAPER

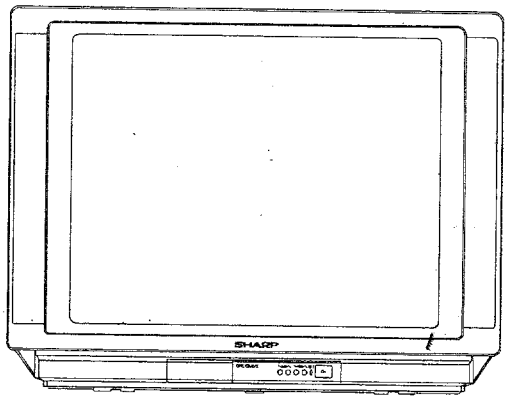
PRINTED IN SPAIN

63DS-03S
70DS-03S
70DS-05S

SHARP SERVICE MANUAL

SELF63DS03S/3

CA10 - CHASSIS



PAL SYSTEM COLOUR TELEVISION

63DS-03S
70DS-03S
MODELS **70DS-05S**

In the interests of user safety (required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

CONTENTS

ELECTRICAL SPECIFICATION 2
IMPORTANT SERVICE NOTES 2
SERVICE ADJUSTMENTS 3
PRINTED WIRING BOARDS 7
SCHEMATIC DIAGRAM 9
BLOCK DIAGRAM 11
PARTS LIST 13

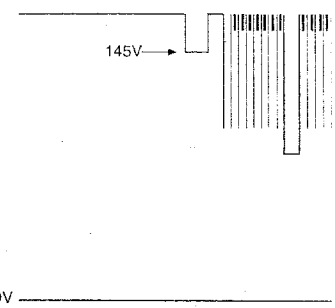
SHARP CORPORATION

SERVICE ADJUSTMENTS

All the adjustments required for this chasis will be done in Service Mode, except G2 and Focus.

• G2 ADJUSTMENT

1. Receive cross hatch pattern signal.
2. Set contrast to 80/100 and brightness to 40/100.
3. Connect the oscilloscope to the red cathode and adjust G2 to read 145V on the sensor pulse as in below drawing:



NOTE:
Osciloscope should be adjustated for vertical TV field trigger and synchronized with video signa

• SERVICE MODE FUNCTION

This mode function is provided to assist with the settings of those adjustment that may vary from on Picture Tube to another, or between models.

In order to use the Service Mode

1. Connect Test Pattern signal to antenna terminal.
2. Press main switch to "OFF".
3. Press volume-down and channel-up buttons and main switch to "ON" simultaneously.
4. Service mode is now entered.

The required adjustments can then be made from the Remote Control Unit.
The only buttons required are the following:
Up/Down-channel for movement in adjustment options menu; Up/Down-volume are used to carry out a adjustment in said menu; ON/OFF is used to memorize a new adjustment.

To exit service mode, press main switch to off.

Adjustment menu is as follows:

— SERVICE SOFTWARE
— IF PLL ADJUSTMENT
— AGC TAKE OVER POINT
— EAST WEST WIDTH
— HORIZONTAL SHIFT
— VERTICAL LINEARITY
— VERTICAL AMPLITUDE
— VERTICAL SHIFT
— S. CORRECTION
— EAST WEST PARABOLA
— EAST WEST CORNER
— EAST WEST TRAPEZIUM
— RED GAIN
— GREEN GAIN
— BLUE GAIN
— ALTER NVM PAG
— ALTER NVM POS
— ALTER NVM VAL
— TELETEXT MIX MODE CONTRAST (ONLY FOR 70DS05S
— TELETEXT CONTRAST (ONLY FOR 70DS05S)
— OSD CONTRAST (ONLY FOR 70DS05S)
— OPC VALUE (ONLY FOR 70DS05S)
— AUTOINSTALLATION ON/OFF

63DS-03S
70DS-03S
70DS-05S

ELECTRICAL SPECIFICATIONS

Aerial Input Impedance .....75 ohm unbalanced
Convergence .....Self Converging System
Focus .....Bipotential electrostatic
Audio Power Output Rating .....10+10W (M.P.O.)
Picture IF Carrier Frequency .....38.9 MHz
a) Sound IF Carrier Frequency .....33.4 MHz
b) Sound IF Carrier Frequency .....33.16 MHz
Colour Sub-Carrier Frequency .....34.47 MHz (Nominal)

Power Input .....220/240 Volts AC 50 Hz
Power Consumption at Stand-by 3W
Power Consumption .....90 Wh
Speakers Size 13cmX6cm
Speaker Coil Impedance .....8 ohm
Sweep Deflection .....Magnetic
Tuning Ranges .....48.25 MHz ÷ 855.5 MHz CATV Special channels

Specifications are subject to change without prior notice .

WARNING

The chassis in this receiver is partially hot. Use an isolation transformer between the line cord plug and power receptacle, when servicing this chassis.
To prevent electric shock, do not remove cover. No user-serviceable parts inside. Refer servicing to qualified service personnel.

IMPORTANT SERVICE NOTES

Maintenance and repair of this receiver should be carried out by qualified service personnel only.

SERVICING OF HIGH VOLTAGE SYSTEM AND PICTURE TUBE

When servicing the high voltage system, remove static charge from it by connecting a 10 k ohm resistor in series with an insulated wire (such as test probe) between picture tube ground tag and high voltage lead. (AC line cord should be disconnected from AC outlet).

1. Picture tube in this receiver employs integral implosion protection.
2. Replace with tube of the same type number for continued safety.
3. Do not lift picture tube by the neck.
4. Handle the picture tube only when wearing shatterproof goggles and after discharging the high voltage completely.

X-RAY

This receiver is designed so that any X-Ray radiation is kept to an absolute minimun. Since certain malfunctions ar servicing may produce potentially hazardous radiation with prolonged exposure at close range, the following precautions should be observed.

1. When repairing the circuit, be sure not to increase the high voltage to more than 30.0 kV (at beam 1000 μA) for the set.
2. To keep the set in a normal operation, be sure to make it function on 23.5kV ± 1.5kV (at beam1000 μA) in the case of the set. The set has been factory adjusted to the above mentioned high voltage. If there is a possibility that high voltage fluctuates as result of the repairs, never forget to check for such high voltage after the work.
3. Do not substitute a picture tube with unauthorized types or brands which may cause excess X-Ray radiation.

BEFORE RETURNING THE RECEIVER

In addition to the checks necessary as a result of a repair having been carried out, the following additional safety checks should also be made before returning the units to the user.

1. Inspect all lead insulation to make certain that leads are not pinched or that harware is not lodged between the chassis and other metal parts in the receiver.
2. Inspect all protective devices such as non-metallic control knobs, insulating fishpapers, cabinet backs, adjustament and compartament covers or shields, insolation resistor-capacity networks, mechanical insulators, etc.

• VERTICAL AMPLITUDE

a) Receive Philips pattern signal.
b) When volume-up button is pressed, vertical size picture increases.
c) When volume-down button is pressed, vertical size of picture decreases.
d) Adjust the vertical size to obtain overscan (fig. 4).

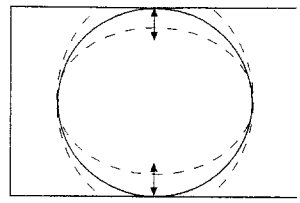


Fig. 4

• VERTICAL SHIFT

a) Receive Philips pattern signal.
b) When volume-up button is pressed, picture moves up.
c) When volume-down is pressed, picture moves down.
d) Adjust the horizontal location to obtain picture centering (fig. 5).

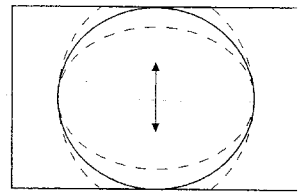


Fig. 5

• S-CORRECTION

a) Receive Philips pattern signal.
b) When volume-up button is pressed, upper and lower scanning decreases, and center scanning increases.
c) When volume-down button is pressed, upper and lower scanning increases, and center scanning decreases.
d) Adjust the S-correction to obtain a balance between upper, lower and center. (fig. 6).

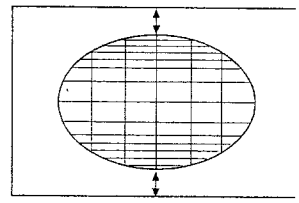


Fig. 6

• EAST - WEST PARABOLA

a) Receive Philips pattern signal.
b) When volume-up button is pressed, side pincushion changes from pincushion shape.
c) When volume-down button is pressed, side pincushion changes from barrel shape.
d) Adjust the E-W PARABOLA to obtain condition as (fig. 7).

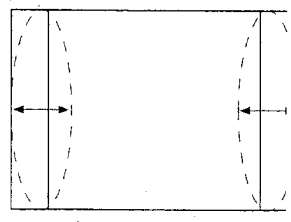


Fig. 7

• EAST - WEST CORNER

a) Receive Philips pattern signal.
b) When volume-down button is pressed, side pincushion changes from pincushion shape.
c) When volume-up button is pressed, side pincushion changes from barrel to pincushion shape.
d) Adjust the E-W CORNER to obtain condition as in (fig. 8).

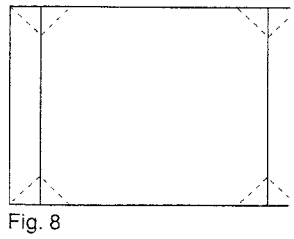


Fig. 8

• EAST - WEST TRAPEZIUM

a) Receive Philips pattern signal.
b) When volume-up button is pressed, side pincushion changes.
c) When volume-down button is pressed, side pincushion changes.
d) Adjust the E-W TRAPEZIUM to obtain condition as in (fig. 9).

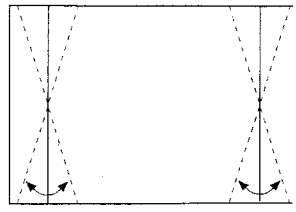


Fig. 9

• IF PLL ADJUSTMENT

a) Receiver the "COLOUR BAR" signal, CH 69 (855.25 Mhz).
b) Push POWER button on Remote Control. Setting is made automatically.
c) To exit Service Mode, press main switch to OFF.

• AGC TAKE OVER POINT

a) Receive the "COLOUR BAR" signal (Signal strength: 57 dB/μV)
b) Push CH up button. Setting is made automatically.
c) To exit Service Mode, press main switch to OFF.

GEOMETRY ADJUSTMENT PROCEDURE

Adjustment Note:

The procedure for making adjustments to vertical corrections is as follows:
-Adjust VERTICAL LINEARITY
-Adjust S. CORRECTION
-Adjust VERTICAL SHIFT
-Adjust VERTICAL AMPLITUDE

The procedure for making adjustments to horizontal corrections is as follows:
•Set E-W WIDTH to minimum
-Adjust HORIZONTAL SHIFT
-Adjust E-W PARABOLA
-Adjust E-W WIDTH
-Adjust E-W TRAPEZIUM
-Adjust E-W CORNER

• EAST - WEST WIDTH

a) Receive Philips pattern signal.
b) When volume-up button is pressed, horizontal scanning increases.
c) When volume-down button in pressed, horizontal scanning decreases.
d) Adjust the horizontal amplitude to obtain 9% overscan (fig. 1).

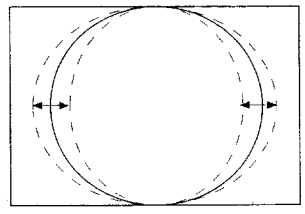


Fig. 1

• HORIZONTAL SHIFT

a) Receive Philips pattern signal.
b) When volume-up button is pressed, picture moves to the left.
c) When volume-down button is pressed, picture moves to the right.
d) Adjust the horizontal location to obtain picture centering (fig. 2).

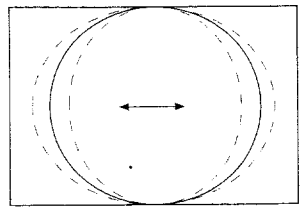


Fig. 2

• VERTICAL SLOPE

a) Receive center cross chart from pattern generator.
b) Adjust horizontal line off the cross figure to coincide with the edge of the black area in the center of C.R.T. (fig. 3).

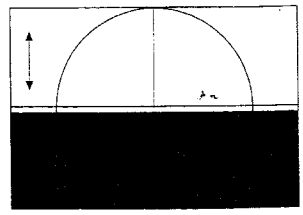


Fig. 3

COLOUR ADJUSTMENT

The following adjustments are only required when the Picture Tube is changed.

• RED GAIN / GREEN GAIN / BLUE GAIN

a) Using brightness and contrast buttons, select a luminance of ≈ 110 NITS.
b) Operate again in Service Mode and select location RED GAIN / GREEN GAIN / BLUE GAIN, to obtain colour coordinates:

$$X = 0.290 \pm 0.015$$
$$Y = 0.284 \pm 0.015$$

To increase press volume-up button and to decrease press volume-down button

RED GAIN	alter "X" coordinate
GREEN GAIN	alter "Y" coordinate
BLUE GAIN	alter "X" and "Y" coordinate

c) The changes introduced can be memorized by pressing button ⏻ on TV set.

d) Exit Service Mode and check colour coordinates "X" and "Y" at 20 and 110 NITS. It may be necessary to repeat procedure 1 and 2 of COLOUR ADJUSTMENT.

ACCESS TO NVM

Press CH∧ to move in the following secuence:
ALTER NVM PAG → ALTER NVM POS → ALTER NVM VAL
to alter preseting adjustments, press up/down-volume buttons on ALTER NVM VAL.
⚠ CAUTION: Do not change NVM VALUE to avoid risk of serious damages to TV set.

CONTRAST ADJUSTMENT (Only for 70DS05S)

Up/Down-volume buttons are used to adjust the contrast of the following items:
—TELETEXT MIX MODE CONTRAST
—TELETEXT CONTRAST
—OSD CONTRAST

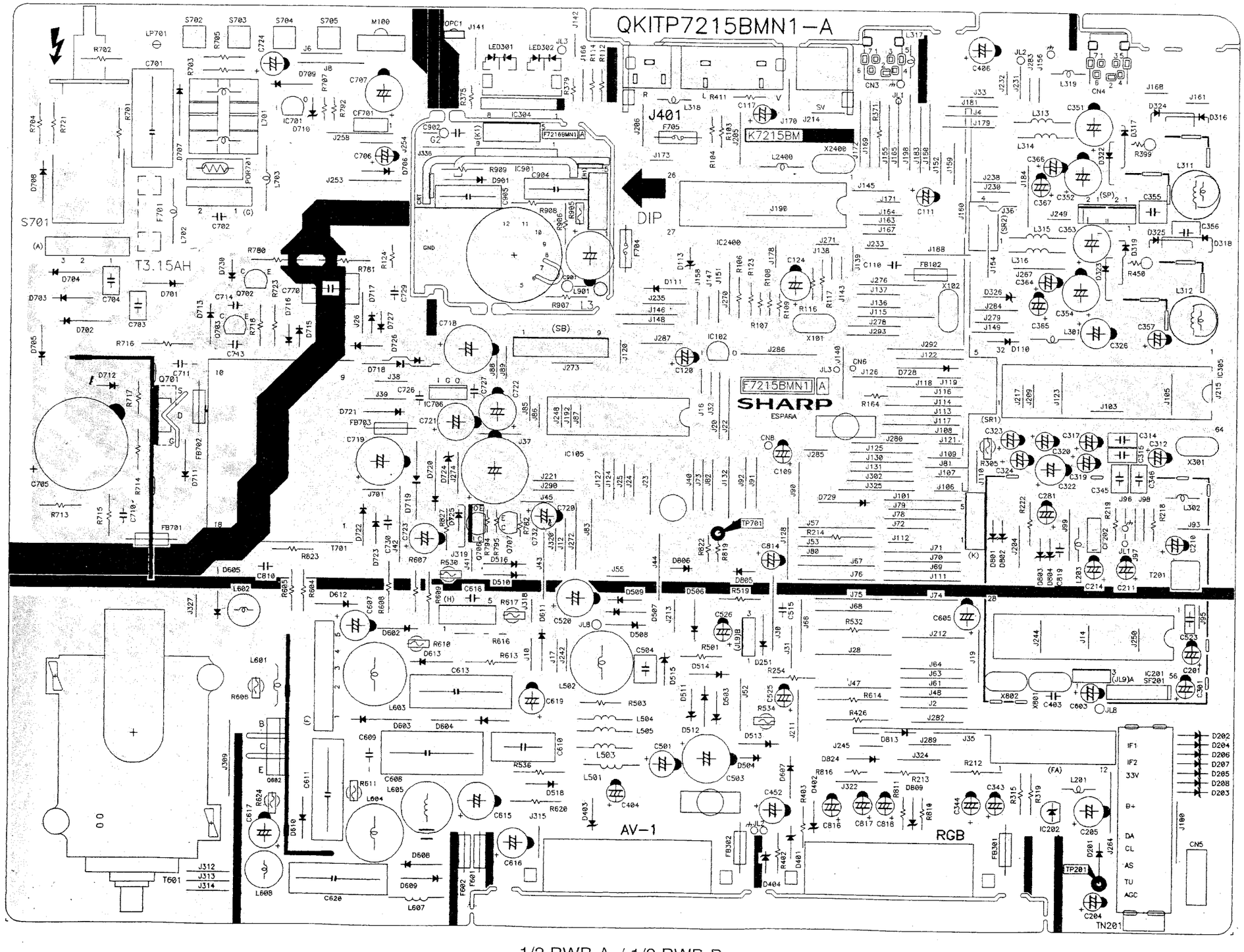
OPC VALUE (Only for 70DS05S)

Shows reading of detected illuminated value by O.P.C. (Optical Picture Control) to check function.

AUTO INSTALLATION OFF/ON

When ON is selected, the TV will perform the autoinstallation secuence as soon as service mode is removed.

PRINTED WIRING BOARDS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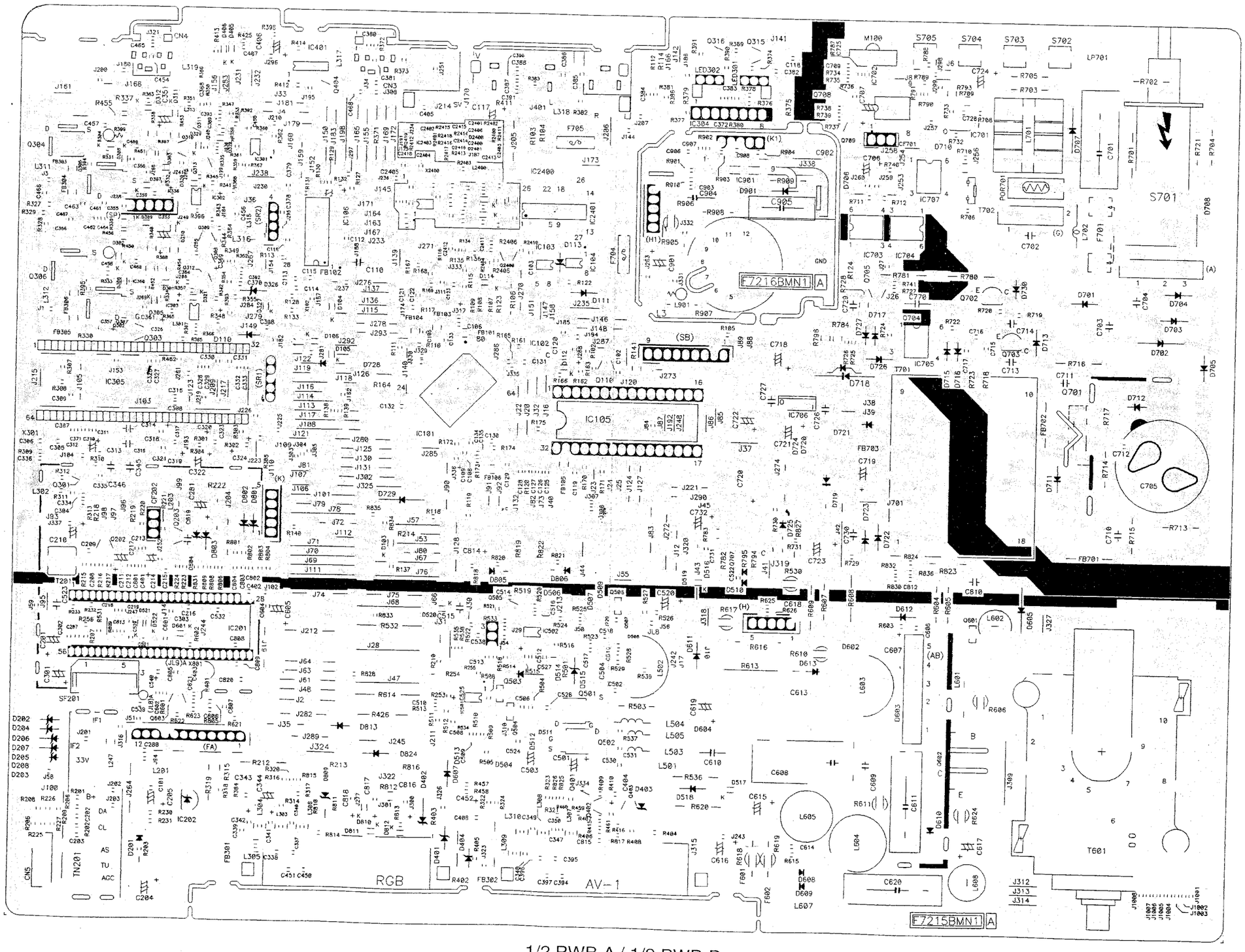
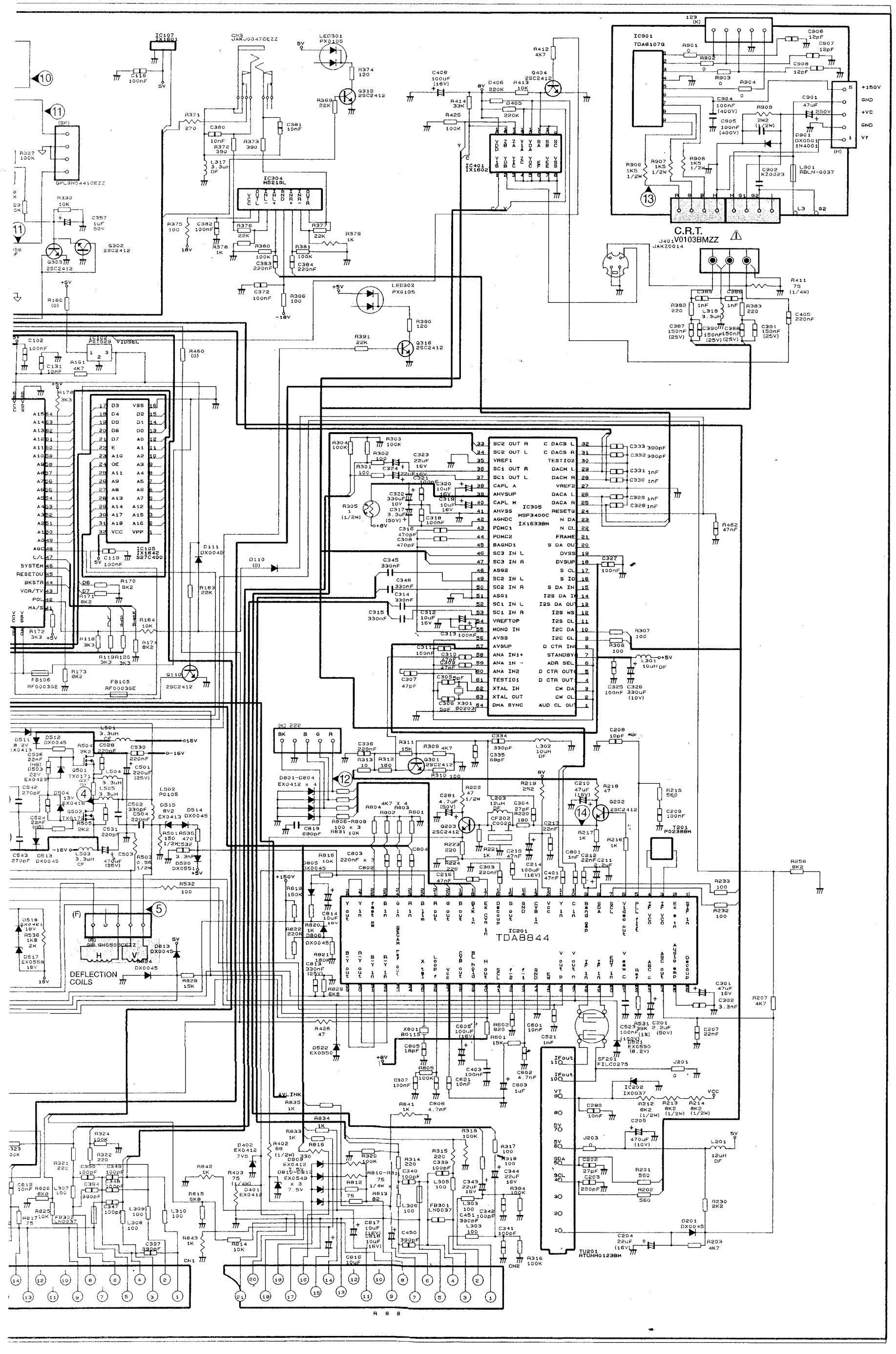
PRINTED WIRING BOARDS



1/2 PWB-A / 1/2 PWB-B



1
650 Vp-p / 70KHz aprox.

2
6.24Vp-p /1H

3
1.28 KVp-p/1-H

4
38.8 Vp-p/1-V

5
28.8 Vp-p/1-V

6
0.62 Vp-p/1-V

7
1.1 Vp-p/1-V

8
2.42 Vp-p/1-H

9
50.4 Vp-p/1-H

10
38.4 Vp-p/150KHz+AUDIO

11
16.4 Vp-p/AUDIO

12
2 Vp-p/1-H

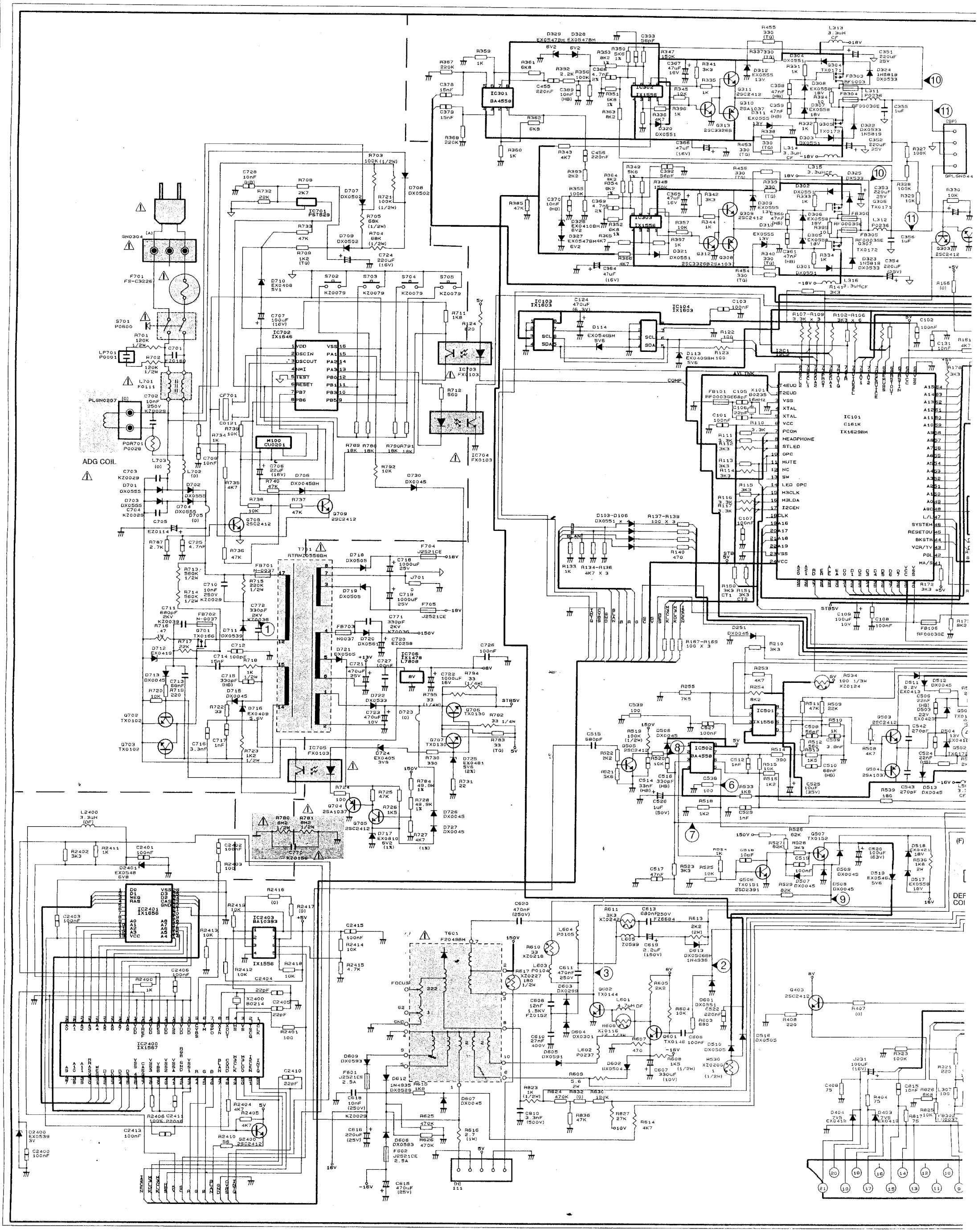
13
118 Vp-p/1-H

14

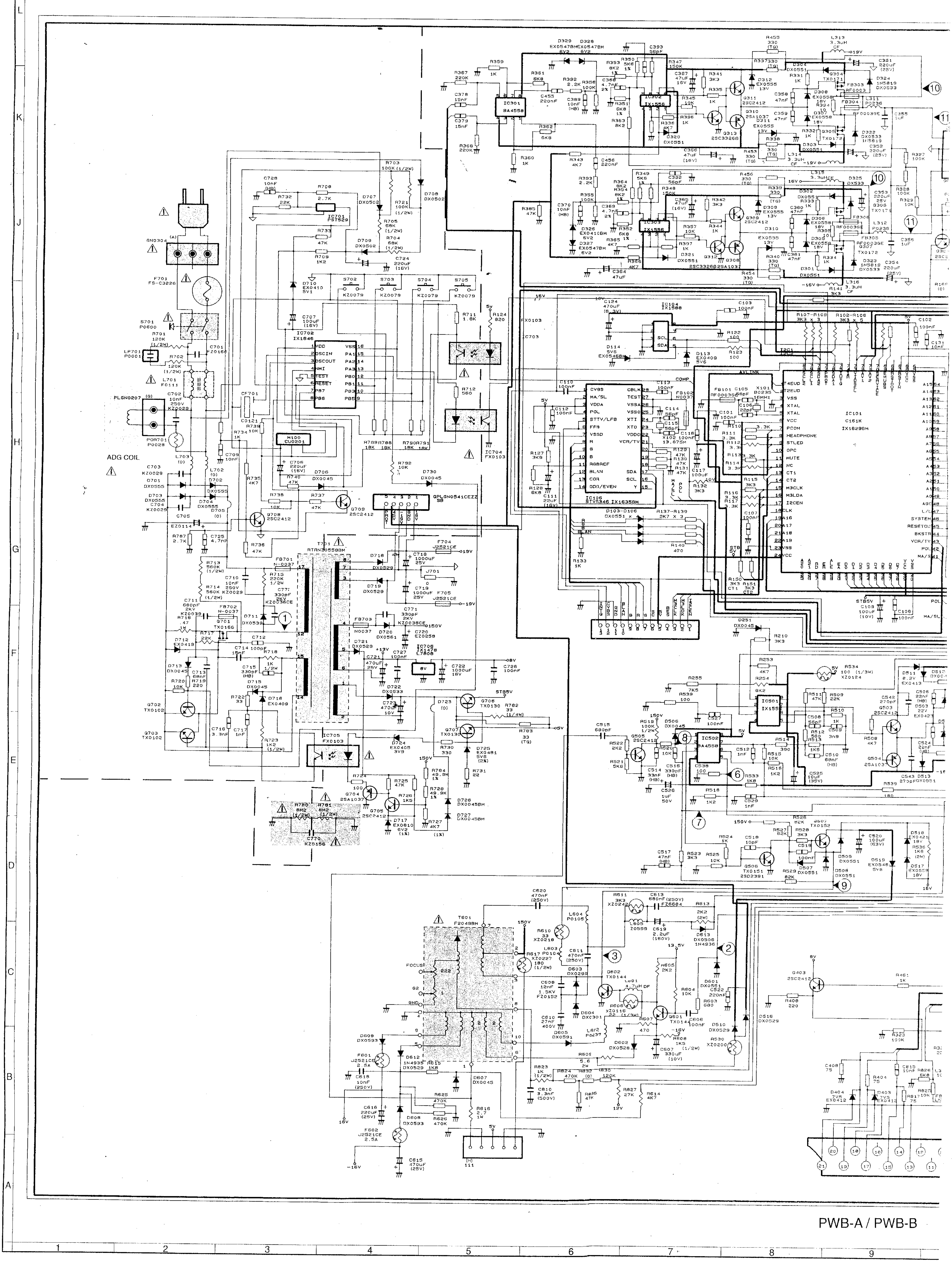
NOTE:

Wave forms are obtained with
a colour bar signal of 79dB/μV Antenna in.

SCHEMATIC DIAGRAM 70 DS-05S



SCHEMATIC DIAGRAM 63/70 DS-03S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IC101 C161K IX1629BM
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IC702 IX1646
IC704 FX0103
IC705 FX0103
IC706 IX1478 L7808
IC501 IX1555
IC502 BA4558
T701 RTANZ0558BM
T601 F2049BM
M100 CU0201
ADG COIL
AVLINK
COMP
FOCUS
G2
GND
QPLGN0541CEZZ SB
PLGN0207
GN0304
F701 FS-C3226
S701 P0600
LP701 P0001
L701 F0111
POR701 P0028
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F602 J2521CE 2.5A
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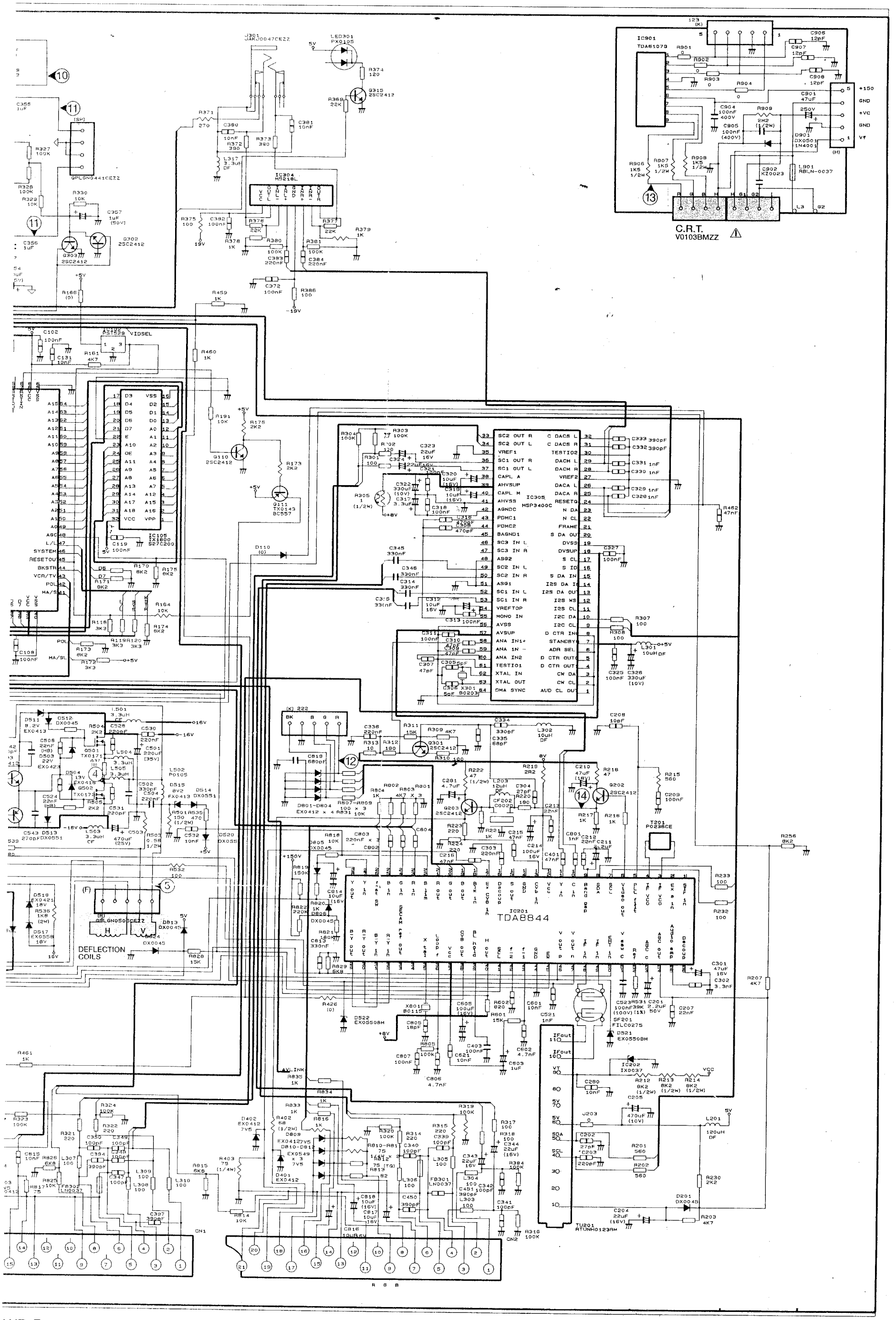
-16V
19V
-19V
12V
13.5V
STB5V

PWB-A / PWB-B



1 650 Vp-p / 70KHz apro

2 6.24Vp-p /1H

3 1.28 KVp-p/1-H

4 38.8 Vp-p/1-V

5 28.8 Vp-p/1-V

6 0.62 Vp-p/1-V

7 1.1 Vp-p/1-V

8 2.42 Vp-p/1-H

9 50.4 Vp-p/1-H

10 38.4 Vp-p/150KHz+AUD

11 16.4 Vp-p/AUDIO

12 2 Vp-p/1-H

13 118 Vp-p/1-H

14

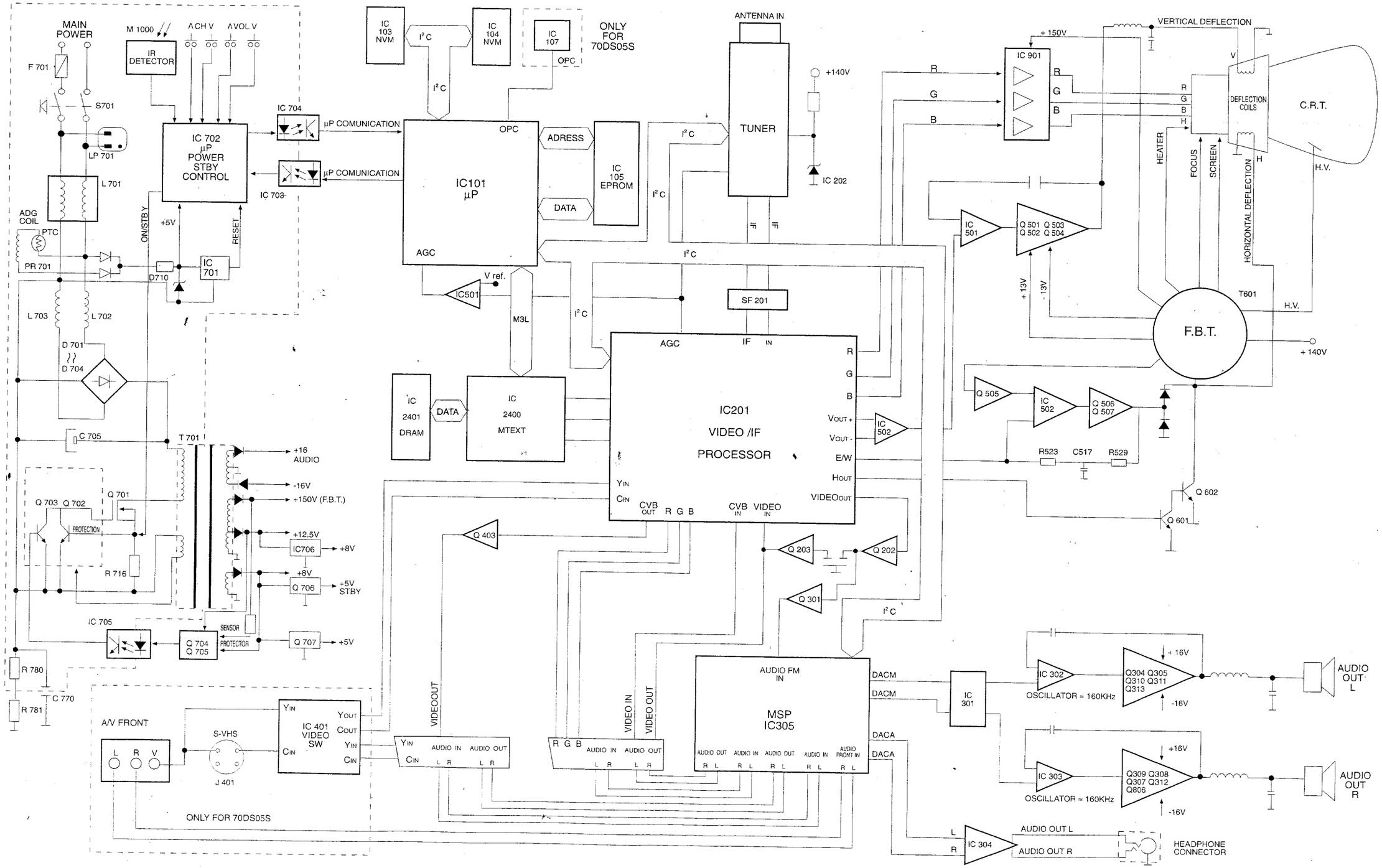
NOTE:

Wave forms are obtained with a colour bar signal of 79dB/µV Antenna in.

WB-B

10 11 12 13 14 15 16 17 18

BLOCK DIAGRAM 63DS03S / 70DS03S / 70DS05S



PARTS LIST

REPLACEMENT PARTS

Replacement parts which have special safety characteristics are identified in this manual. Electrical components having such features are identified by ⚠ in the Replacement Parts list.
The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended is not permitted. Replacement parts not shown in this service manual may create shock fire, or other hazards.

HOW TO ORDER REPLACEMENT PARTS

To have your order completed promptly and correctly please supply the following information.

1. MODEL NUMBER
2. REF. NO.
3. PART NO.
4. DESCRIPTION
5. CODE
6. QUANTITY

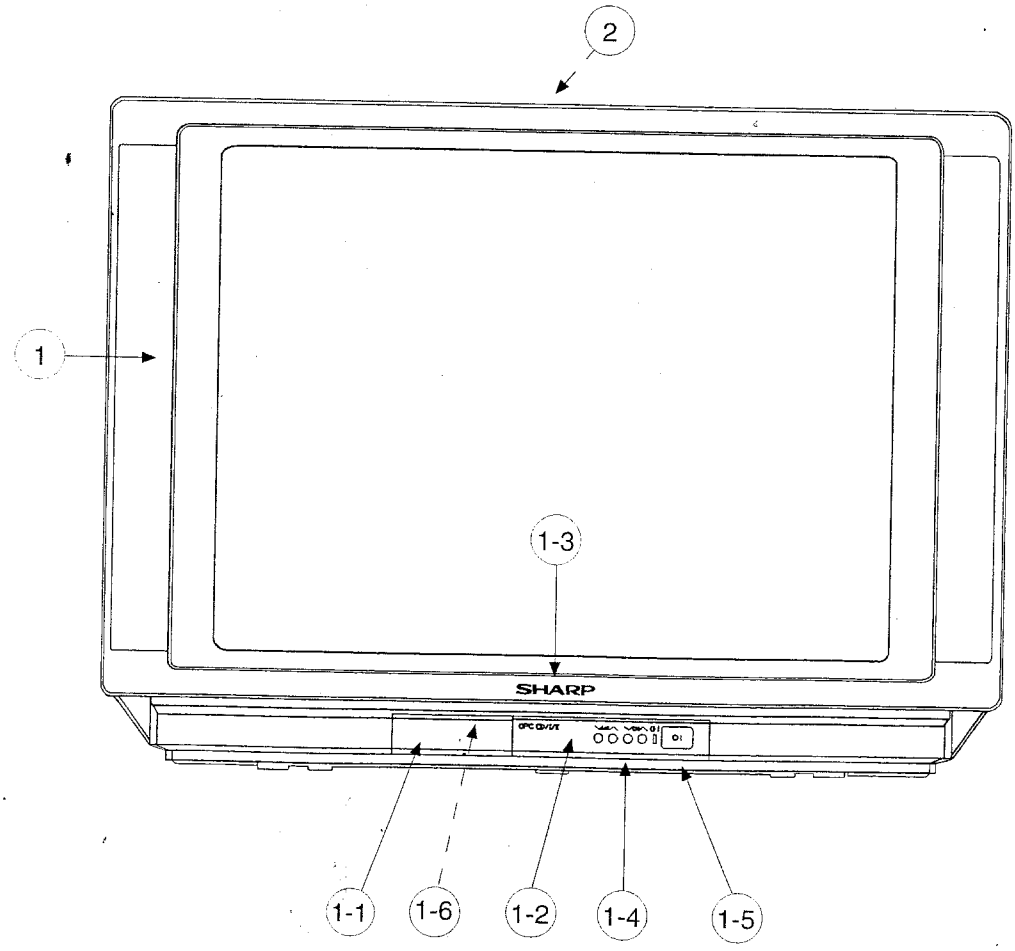
★ MARK: SPARE PARTS DELIVERY SECTION

REF. NO.	PARTS NO.	★	DESCRIPTION	CODE
PICTURE TUBE				
⚠	VB59EAK7111*N	S	C.R.T. 25"	CW
⚠	VB66EAK7111*N	S	C.R.T. 28"	CW
⚠	CCILG0403BMV0	S	Degaussing Coil 25"	AT
⚠	CCILG0404BMV0	S	Degaussing Coil 28"	AV
PRINTED WIRING BOARDS ASSEMBLES (Not replacement item)				
PWB-A	DUNTK7215CJV1	S	Mother Unit 63DS03S	—
PWB-A	DUNTK7215CJV0	S	Mother Unit 70DS03S	—
PWB-A	DUNTK7215CJV3	S	Mother Unit 70DS05S	—
PWB-B	DUNTK7216BMV1	S	C.R.T. Socket Unit 63DS03S	—
PWB-B	DUNTK7216BMV0	S	C.R.T. Socket Unit 70DS03S	—
PWB-B	DUNTK7216BMV3	S	C.R.T. Socket Unit 70DS05S	—
PWB-A	**MOTHER UNIT**			
TUNER				
TU 0201	RTUNH0123BMZZ	S	Tuner	BA
★TE-GE8(100)	INTEGRATED CIRCUITS			
IC 0101	RH-IX1629BMZZ	S	SAB-C161K-L16Q	AY
IC 0102	VHIPST529C2-1	S	PST529C	AD
IC 0103	RH-IX1603BMZZ	S	NVM 70DS05S	AV
IC 0104	RH-IX1588BMZZ	S	NVM 63/70DS03S	AQ
★ IC 0104	RH-IX[illegible]BMZZ	S	NVM 70DS05S 10.93	AV
IC 0105	CH-IX1600CJSC	S	EPROM 63DS03S	AX
IC 0105	CH-IX1600CJSB	S	EPROM 70DS03S	AX
IC 0105	CH-IX1642CJS3	S	EPROM 70DS05S	BA
IC 0106	RH-IX1635BMZZ	S	STV5346	AY
IC 0107	RH-IX1601BMZZ	S	O.P.C.	AH
IC 0201	VHITDA8844/-1	S	TDA8844	BD
IC 0202	RH-IX0037CEZZ	S	UPC574J 33V	AD
IC 0301	VHIBA4558//-1	S	BA4558 → NICHT SMD!	AC
IC 0302	RH-IX1556BMZZ	S	BA10393 S0P8	AD
IC 0303	RH-IX1556BMZZ	S	BA10393 S0P8	AD
IC 0304	VHIM5218L//-1	S	M5218L	AF
IC 0305	RH-IX1633BMZZ	S	MSP3400C	BB
IC 0401	RH-IX1602BMZZ	S	HEF 4053	AE
IC 0501	RH-IX1556BMZZ	S	BA10393	AD
IC 0502	VHIBA4558FF-1	S	BA4558 F/2 SMD	~~AC~~
IC 0701	VHIPST529C2-1	S	PST529C	AD
IC 0702	RH-IX1646BMZZ	S	ST6203B	AL
⚠ IC 0703	RH-FX0103BMZZ	S	MOC8105SR2V	AD
⚠ IC 0704	RH-FX0103BMZZ	S	MOC8105SR2V	AD
⚠ IC 0705	RH-FX0103BMZZ	S	MOC8105SR2V	AD
IC 0706	RH-IX1478BMZZ	S	L7808	AE
IC 2400	RH-IX1567BMZZ	S	SDA5273 SDIP52	BG
IC 2401	RH-IX1656BMZZ	S	DRAM	AZ
IC 2403	RH-IX1556BMZZ	S	BA10393 S0P8	AD
TRANSISTORS				
Q 0110	VS2SC2412KQ-1	S	2SC2412	AA
Q 0111	RH-TX0143BMZZ	S	BC557-B	AA
Q 0202	VS2SC2412KQ-1	S	2SC2412	AA
Q 0203	VS2SC2412KQ-1	S	2SC2412	AA
Q 0301	VS2SC2412KQ-1	S	2SC2412	AA
Q 0302	VS2SC2412KQ-1	S	2SC2412	AA
Q 0303	VS2SC2412KQ-1	S	2SC2412	AA
Q 0304	RH-TX0171BMZZ	J	IRFR9020TM	AF
Q 0305	RH-TX0172BMZZ	J	IRFR010TM	AE
Q 0306	RH-TX0171BMZZ	J	IRFR9020TM	AF
Q 0307	RH-TX0172BMZZ	J	IRFR010TM	AE
Q 0308	VS2SA1037KQ-1	S	BC807	AA
Q 0309	VS2SC2412KQ-1	S	2SC2412	AA
Q 0310	VS2SA1037KQ-1	S	BC807	AA
Q 0311	VS2SC2412KQ-1	S	2SC2412	AA
Q 0312	VS2SC3326B/-1	S	2SC3326B	AD
Q 0313	VS2SC3326B/-1	S	2SC3326B	AD
Q 0315	VS2SC2412KQ-1	S	2SC2412	AA
Q 0316	VS2SC2412KQ-1	S	2SC2412	AA
Q 0403	VS2SC2412KQ-1	S	2SC2412	AA
Q 0404	VS2SC2412KQ-1	S	2SC2412	AA
Q 0501	RH-TX0171BMZZ	J	IRFR9020TM	AF
Q 0502	RH-TX0172BMZZ	J	IRFR010TM	AE
Q 0503	VS2SC2412KQ-1	S	2SC2412	AA
Q 0504	VS2SA1037KQ-1	S	BC807	AA
Q 0505	VS2SC2412KQ-1	S	2SC2412	AA
Q 0506	RH-TX0151BMZZ	S	2SD2391Q	AD
Q 0507	RH-TX0152BMZZ	S	BC846BLT1	AA
Q 0601	RH-TX0146BMZZ	S	2SD2153T100/W	AD
Q 0602	RH-TX0144BMZZ	S	BUH 515	AK
Q 0701	RH-TX0166BMZZ	S	2SK2605	AK
Q 0702	RH-TX0102BMZZ	S	BC338	AB
Q 0703	RH-TX0102BMZZ	S	BC338	AB
Q 0704	VS2SA1037KQ-1	S	BC807	AA
Q 0705	VS2SC2412KQ-1	S	2SC2412	AA
Q 0706	RH-TX0130BMZZ	S	BC338-40	AB
Q 0707	RH-TX0130BMZZ	S	BC338-40	AB
Q 0708	VS2SC2412KQ-1	S	2SC2412	AA
Q 0709	VS2SC2412KQ-1	S	2SC2412	AA
Q 2400	VS2SC2412KQ-1	S	2SC2412	AA
DIODES				
D 0103	RH-DX0551BMZZ	S	LL4148	AA
D 0104	RH-DX0551BMZZ	S	LL4148	AA
D 0105	RH-DX0551BMZZ	S	LL4148	AA
D 0106	RH-DX0551BMZZ	S	LL4148	AA
D 0111	RH-DX0045BMZZ	S	1N4148	AA
D 0113	RH-EX0409BMZZ	S	Zener BZX79C5V6	AA
D 0114	RH-EX0546BMZZ	S	Zener TZMC5V6	AA
D 0201	RH-DX0045BMZZ	S	1N4148	AA
D 0251	RH-DX0045BMZZ	S	1N4148	AA
D 0301	RH-DX0551BMZZ	S	LL4148	AA
D 0302	RH-DX0551BMZZ	S	LL4148	AA
D 0303	RH-DX0551BMZZ	S	LL4148	AA
D 0304	RH-DX0551BMZZ	S	LL4148	AA
D 0305	RH-EX0558BMZZ	S	Zener TZMC18	AA
D 0306	RH-EX0558BMZZ	S	Zener TZMC18	AA
D 0307	RH-EX0558BMZZ	S	Zener TZMC18	AA
D 0308	RH-EX0558BMZZ	S	Zener TZMC18	AA
D 0309	RH-EX0555BMZZ	S	Zener TZMC13	AA
D 0310	RH-EX0555BMZZ	S	Zener TZMC13	AA

REF. NO.	PARTS NO.	★	DESCRIPTION	CODE
TRANSFORMERS				
⚠ T 0601	RTRNF2049BMZZ	S	F.B.T.	BA
⚠ T 0701	RTRNZ0558BMZZ	S	Chopper	AS
CAPACITORS				
C 0109	VCEAGA1AW107M	S	100 10V Electrolytic	AA
C 0124	VCEAGA0JW477M	S	470 6.3V Electrolytic	AB
C 0205	VCEAGA1AW477M	S	470 10V Electrolytic	AB
C 0214	VCEAGA1CW107M	S	100 16V Electrolytic	AB
C 0314	RC-FZ9334BMNJ	J	0.33 63V Mylar	AC
C 0315	RC-FZ9334BMNJ	J	0.33 63V Mylar	AC
C 0322	VCEAGA1AW337M	S	330 10V Electrolytic	AB
C 0326	VCEAGA1AW337M	S	330 10V Electrolytic	AB
C 0345	RC-FZ9334BMNJ	J	0.33 63V Mylar	AC
C 0346	RC-FZ9334BMNJ	J	0.33 63V Mylar	AC
C 0351	VCEAGA1EW227M	S	220 25V Electrolytic	AA
C 0352	VCEAGA1EW227M	S	220 25V Electrolytic	AA
C 0353	VCEAGA1EW227M	S	220 25V Electrolytic	AA
C 0354	VCEAGA1EW227M	S	220 25V Electrolytic	AA
C 0355	RC-FZ9105BMNJ	J	1 63V Mylar	AD
C 0356	RC-FZ9105BMNJ	J	1 63V Mylar	AD
C 0403	RC-FZ9104BMNJ	J	0.1 63V Mylar	AB
C 0406	VCEAGA1CW107M	S	100 16V Electrolytic	AB
C 0501	VCEAGA1EW227M	S	220 25V Electrolytic	AA
C 0503	VCEAGA1EW477M	S	470 25V Electrolytic	AD
C 0504	RC-FZ9224BMNJ	J	0.22 63V Mylar	AC
C 0520	VCEAGA1JW107M	S	100 63V Electrolytic	AB
C 0523	RC-FZ9104BMNJ	J	0.1 63V Mylar	AB
C 0542	VCCSPA1HL271J	S	270p 50V Ceramic	AA
C 0543	VCCSPA1HL271J	S	270p 50V Ceramic	AA
C 0605	VCEAGA1CW107M	S	100 16V Electrolytic	AB
C 0606	RC-FZ9104BMNJ	J	0.1 63V Mylar	AB
C 0607	VCEAGA1AW337M	S	330 10V Electrolytic	AB
C 0608	RC-FZ0152BMZZ	S	0.012 1.5KV Mylar	AD
C 0610	VCQPSC2GA273K	J	0.027 400V Mylar	AB
C 0611	RC-FZ6474BMNJ	J	0.47 250V Mylar	AE
C 0613	RC-FZ6684BMNJ	J	0.68 250V Mylar	AE
C 0615	VCEAGA1EW477M	S	470 25V Electrolytic	AD
C 0616	VCEAGA1EW227M	S	220 25V Electrolytic	AA
C 0618	RC-KZ0029CEZZ	S	0.01 250V Ceramic	AC
C 0619	VCEAGA2CW225M	S	2.2 160V Electrolytic	AB
C 0620	RC-FZ6474BMNJ	J	0.47 250V Mylar	AE
C 0701	RC-FZ0160BMZZ	S	0.47 275V Mylar	AG
C 0702	RC-KZ0029CEZZ	S	0.01 250V Ceramic	AC
C 0705	RC-EZ0114BMZZ	S	220 385V Electrolytic	AS
C 0707	VCEAGA1CW107M	S	100 16V Electrolytic	AB
C 0710	RC-KZ0029CEZZ	S	0.01 250V Ceramic	AC
C 0711	RC-KZ0039CEZZ	S	680p 2KV Ceramic	AB
C 0713	RC-FZ9683BMNJ	J	0.068 63V Mylar	AB
C 0714	RC-FZ9153BMNJ	J	0.015 63V Mylar	AB
C 0718	VCEAGA1EW108M	S	1000 25V Electrolytic	AD
C 0719	VCEAGA1EW108M	S	1000 25V Electrolytic	AD
C 0720	RC-EZ0258CEZZ	S	100 200V Electrolytic	AH
C 0721	VCEAGA1EW477M	S	470 25V Electrolytic	AD
C 0722	VCEAGA1CW108M	S	1000 16V Electrolytic	AE
C 0723	VCEAGA1AW477M	S	470 10V Electrolytic	AB
C 0724	VCEAGA1CW227M	S	220 16V Electrolytic	AC
C 0726	RC-FZ9104BMNJ	J	0.1 63V Mylar	AB
C 0727	RC-FZ9104BMNJ	J	0.1 63V Mylar	AB
⚠ C 0770	RC-KZ0156CEZZ	S	3300p 4KV Ceramic	AD
C 0771	RC-KZ0036CEZZ	S	330p 2KV Ceramic	AC
C 0772	RC-KZ0036CEZZ	S	330p 2KV Ceramic	AC
C 0810	VCKYPA2HB332K	S	3300p 500V Ceramic	AB
C 0819	VCCSPA1HL681J	S	680p 50V Ceramic	AB
J 0231	VCEAGA1CW107M	S	100 16V Electrolytic	AB
RESISTORS				
R 0141	VRS-TQ2BD332J	S	3.3K 1/8W Metal Oxide	AA
R 0305	RR-XZ0200BMZZ	S	1 1/2W Fuse Resistor	AB
R 0337	VRS-TQ2BD331J	S	330 1/8W Metal Oxide	AA
R 0338	VRS-TQ2BD331J	S	330 1/8W Metal Oxide	AA
R 0339	VRS-TQ2BD331J	S	330 1/8W Metal Oxide	AA
R 0340	VRS-TQ2BD331J	S	330 1/8W Metal Oxide	AA
R 0453	VRS-TQ2BD331J	S	330 1/8W Metal Oxide	AA
R 0454	VRS-TQ2BD331J	S	330 1/8W Metal Oxide	AA
R 0455	VRS-TQ2BD331J	S	330 1/8W Metal Oxide	AA
R 0456	VRS-TQ2BD331J	S	330 1/8W Metal Oxide	AA
R 0530	RR-XZ0200BMZZ	S	1 1/2W Fuse Resistor	AB
R 0534	RR-XZ0124BMZZ	S	100 1/3W Fuse Resistor	AA
R 0536	VRS-VV3DB182J	S	1.8K 2W Metal Oxide	AA
R 0606	RR-XZ0116BMZZ	S	22 1/3W Fuse Resistor	AB
R 0609	VRS-VV3DB5R6J	S	5.6 2W Metal Oxide	AA
R 0610	RR-XZ0218BMZZ	S	33 1/2W Fuse Resistor	AB
R 0611	RR-XZ0242BMZZ	S	3.3K 1/2W Fuse Resistor	AB
R 0613	VRS-VV3DB222J	S	2.2K 2W Metal Oxide	AB
R 0616	VRN-VV3AB2R7J	S	2.7 1W Metal Film	AA
R 0617	RR-XZ0227BMZZ	S	180 1/2W Fuse Resistor	AB
R 0709	VRS-TQ2BD122J	S	1.2K 1/8W Metal Oxide	AA
R 0716	VRN-VV3ABR47J	S	0.47 1W Metal Film	AA
R 0728	VRSTQ2BD4992F	S	49.9K 1/4W Metal Oxide	AA
⚠ R 0780	VRC-UA2HG825K	S	8.2M 1/2W Solid	AA
⚠ R 0781	VRC-UA2HG825K	S	8.2M 1/2W Solid	AA
R 0783	VRS-TQ2BD330J	S	33 1/8W Metal Oxide	AA
R 0784	VRSTQ2BD4992F	S	49.9K 1/4W Metal Oxide	AA
R 0812	VRS-TQ2BD750J	S	75 1/8W Metal Oxide	AA
R 2400	VRS-TQ2BD102J	S	1K 1/8W Metal Oxide	AA
R 2411	VRS-TQ2BD102J	S	1K 1/8W Metal Oxide	AA
MISCELLANEOUS PARTS				
⚠ S 0701	QSW-P0600BMZZ	S	Power Switch	AL
⚠ F 0701	QFS-C3226CEZZ	S	Fuse 3.15A 250V	AE
FH 0701	QFSHD1017CEZZ	S	Fuse Holder	AA
FH 0702	QFSHD1018CEZZ	S	Fuse Holder	AA
F 0601	QFS-J2521CEZZ	S	Fuse 2.5A 125V	AD
F 0602	QFS-J2521CEZZ	S	Fuse 2.5A 125V	AD
F 0704	QFS-J2521CEZZ	S	Fuse 2.5A 125V	AD
F 0705	QFS-J2521CEZZ	S	Fuse 2.5A 125V	AD
S 0702	QSW-K0079GEZZ	S	Switch	AB
S 0703	QSW-K0079GEZZ	S	Switch	AB
S 0704	QSW-K0079GEZZ	S	Switch	AB
S 0705	QSW-K0079GEZZ	S	Switch	AB
M 0100	RRMCU0201BMZZ	S	R/C Receiver	AN
LP 0701	RLAMP0001BMZZ	S	Neon	AC
FB 0101	RCORF0003GEZZ	S	Ferrite	AD
FB 0102	RBLN-0037CEZZ	S	Ferrite Bead	AB
FB 0105	RCORF0003GEZZ	S	Ferrite	AD
FB 0106	RCORF0003GEZZ	S	Ferrite	AD
FB 0301	RBLN-0037CEZZ	S	Ferrite Bead	AB
FB 0302	RBLN-0037CEZZ	S	Ferrite Bead	AB
FB 0303	RCORF0003GEZZ	S	Ferrite	AD
FB 0304	RCORF0003GEZZ	S	Ferrite	AD
FB 0305	RCORF0003GEZZ	S	Ferrite	AD
FB 0306	RCORF0003GEZZ	S	Ferrite	AD
FB 0701	RBLN-0037CEZZ	S	Ferrite Bead	AB
FB 0702	RBLN-0037CEZZ	S	Ferrite Bead	AB
FB 0703	RBLN-0037CEZZ	S	Ferrite Bead	AB
	QSOCZ2051SC32	S	Socket 32 PIN (IC 0105)	AC
AV - 1	QSOCZ2107BMZZ	S	Scart Connector	AE
RGB	QSOCZ2107BMZZ	S	Scart Connector	AE
CN 3	QJAKJ0047CEZZ	S	Earphone Jack	AG
J 401	QJAKZ0101BMZZ	S	Jack	AK
(A)	QPLGN0304CEZZ	S	Connector	AB
(CNS)	QSOCN1067BMZZ	S	Connector	AE
(F)	QPLGN0505CEZZ	S	Connector	AB
(G)	QPLGN0207CEZZ	S	Connector	AA
(SP)	QPLGN0441CEZZ	S	Connector 4pin	AB

REF. NO.	PARTS NO.	★	DESCRIPTION	CODE
D 0311	RH-EX0555BMZZ	S	Zener TZMC13	AA
D 0312	RH-EX0555BMZZ	S	Zener TZMC13	AA
D 0320	RH-DX0551BMZZ	S	LL4148	AA
D 0321	RH-DX0551BMZZ	S	LL4148	AA
D 0322	RH-DX0519BMZZ	S	1N5819	AD
D 0323	RH-DX0519BMZZ	S	1N5819	AD
D 0324	RH-DX0519BMZZ	S	1N5819	AD
D 0325	RH-DX0519BMZZ	S	1N5819	AD
D 0326	RH-EX0410BMZZ	S	Zener BZX79C6V2	AB
D 0327	RH-EX0547BMZZ	S	Zener TZMC6V2	AA
D 0328	RH-EX0547BMZZ	S	Zener TZMC6V2	AA
D 0329	RH-EX0547BMZZ	S	Zener TZMC6V2	AA
D 0401	RH-EX0412BMZZ	S	Zener BZX79C7V5	AB
D 0402	RH-EX0412BMZZ	S	Zener BZX79C7V5	AB
D 0403	RH-EX0412BMZZ	S	Zener BZX79C7V5	AB
D 0404	RH-EX0412BMZZ	S	Zener BZX79C7V5	AB
D 0405	RH-DX0551BMZZ	S	LL4148	AA
D 0406	RH-DX0551BMZZ	S	LL4148	AA
D 0503	RH-EX0418BMZZ	S	Zener BZX79C13V	AB
D 0504	RH-EX0418BMZZ	S	Zener BZX79C13V	AB
D 0506	RH-DX0045BMZZ	S	1N4148	AA
D 0507	RH-DX0045BMZZ	S	1N4148	AA
D 0508	RH-DX0045BMZZ	S	1N4148	AA
D 0509	RH-DX0045BMZZ	S	1N4148	AA
D 0510	RH-DX0505BMZZ	S	1N4935	AB
D 0511	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB
D 0512	RH-DX0045BMZZ	S	1N4148	AA
D 0513	RH-DX0045BMZZ	S	1N4148	AA
D 0514	RH-DX0045BMZZ	S	1N4148	AA
D 0515	RH-EX0413BMZZ	S	Zener BZX79C8V2	AB
D 0516	RH-DX0505BMZZ	S	1N4935	AB
D 0517	RH-EX0558BMZZ	S	Zener TZMC18	AA
D 0518	RH-EX0421BMZZ	S	Zener BZX79C18V	AA
D 0519	RH-EX0546BMZZ	S	Zener TZMC5V6	AA
D 0520	RH-DX0551BMZZ	S	LL4148	AA
D 0521	RH-EX0550BMZZ	S	Zener TZMC8V2	AA
D 0522	RH-EX0550BMZZ	S	Zener TZMC8V2	AA
D 0601	RH-DX0551BMZZ	S	LL4148	AA
D 0602	RH-DX0504BMZZ	S	1N4934	AB
D 0603	RH-DX0299BMZZ	S	BY 228-20	AE
D 0604	RH-DX0301BMZZ	S	BY 299	AD
D 0605	RH-DX0591BMZZ	S	RGP10A 50V	AB
D 0607	RH-DX0045BMZZ	S	1N4148	AA
D 0608	RH-DX0593BMZZ	S	RGP10D 200V	AB
D 0609	RH-DX0593BMZZ	S	RGP10D 200V	AB
D 0612	RH-DX0505BMZZ	S	1N4935	AB
D 0613	RH-DX0506BMZZ	S	1N4936	AB
D 0701	RH-DX0555BMZZ	S	RF2005	AB
D 0702	RH-DX0555BMZZ	S	RF2005	AB
D 0703	RH-DX0555BMZZ	S	RF2005	AB
D 0704	RH-DX0555BMZZ	S	RF2005	AB
D 0706	RH-DX0045BMZZ	S	1N4148	AA
D 0707	RH-DX0502BMZZ	S	1N4005	AA
D 0708	RH-DX0502BMZZ	S	1N4005	AA
D 0709	RH-DX0502BMZZ	S	1N4005	AA
D 0710	RH-EX0408BMZZ	S	Zener BZX79C5V1	AB
D 0711	RH-DX0539BMZZ	S	BYT52M	AC
D 0712	RH-EX0419BMZZ	S	Zener BZX79C15V 0,4W	AB
D 0713	RH-DX0045BMZZ	S	1N4148	AA
D 0715	RH-DX0045BMZZ	S	1N4148	AA
D 0716	RH-EX0409BMZZ	S	Zener BZX79C5V6	AA
D 0717	RH-EX0810BMZZ	S	Zener BZX79A6V2	AC
D 0718	RH-DX0505BMZZ	S	1N4935	AB
D 0719	RH-DX0505BMZZ	S	1N4935	AB
D 0720	RH-DX0561BMZZ	S	RGP15J	AD
D 0721	RH-DX0505BMZZ	S	1N4935	AB
D 0722	RH-DX0519BMZZ	S	1N5819	AD
D 0724	RH-EX0405BMZZ	S	Zener BZX79C3V9	AB
D 0725	RH-EX0481BMZZ	S	Zener BZX79 B5V6	AB
D 0726	RH-DX0045BMZZ	S	1N4148	AA
D 0727	RH-DX0045BMZZ	S	1N4148	AA
D 0730	RH-DX0045BMZZ	S	1N4148	AA
D 0801	RH-EX0412BMZZ	S	Zener BZX79C7V5	AB
D 0802	RH-EX0412BMZZ	S	Zener BZX79C7V5	AB
D 0803	RH-EX0412BMZZ	S	Zener BZX79C7V5	AB
D 0804	RH-EX0412BMZZ	S	Zener BZX79C7V5	AB
D 0805	RH-DX0045BMZZ	S	1N4148	AA
D 0806	RH-DX0045BMZZ	S	1N4148	AA
D 0809	RH-EX0412BMZZ	S	Zener BZX79C7V5	AB
D 0810	RH-EX0549BMZZ	S	Zener TZMC7V5	AA
D 0811	RH-EX0549BMZZ	S	Zener TZMC7V5	AA
D 0812	RH-EX0549BMZZ	S	Zener TZMC7V5	AA
D 0813	RH-DX0045BMZZ	S	1N4148	AA
D 0824	RH-DX0045BMZZ	S	1N4148	AA
D 2400	RH-EX0539BMZZ	S	Zener TZMC3V0	AA
D 2401	RH-EX0548BMZZ	S	Zener TZMC6V8	AA
LED0301	RH-PX0105BMZZ	S	LED	AC
LED0302	RH-PX0105BMZZ	S	LED	AC
PACKADGED CIRCUITS				
⚠ POR0701	RMPTP0028CEZZ	S	P.T.C.	AG
X 0101	RCRSB0235BMZZ	S	Crystal 16 MHz	AF
X 0102	RCRSB0227BMZZ	S	Crystal 13.875 MHz	AG
X 0301	RCRSB0203BMZZ	S	Crystal 18.432 MHz	AG
X 0801	RCRSB0115BMZZ	S	Crystal 4.43 MHz	AG
X 2400	RCRSB0214BMZZ	S	Crystal 20.48 MHz	AH
COILS				
L 0201	VP-DF121K0000	S	120µH 54DS03S	AB
L 0201	VP-DF120K0000	S	12µH	AB
L 0203	VP-DF120K0000	S	12µH	AB
L 0301	VP-DF100K0000	S	10µH	AB
L 0302	VP-DF100K0000	S	10µH	AB
L 0303	VRS-TQ2BD101J	S	100 1/8W Metal Oxide	AA
L 0304	VRS-TQ2BD101J	S	100 1/8W Metal Oxide	AA
L 0305	VRS-TQ2BD101J	S	100 1/8W Metal Oxide	AA
L 0306	VRS-TQ2BD101J	S	100 1/8W Metal Oxide	AA
L 0307	VRS-TQ2BD101J	S	100 1/8W Metal Oxide	AA
L 0308	VRS-TQ2BD101J	S	100 1/8W Metal Oxide	AA
L 0309	VRS-TQ2BD101J	S	100 1/8W Metal Oxide	AA
L 0310	VRS-TQ2BD101J	S	100 1/8W Metal Oxide	AA
L 0311	RCILP0236BMZZ	S	100µH	AQ
L 0312	RCILP0236BMZZ	S	100µH	AQ
L 0313	VP-CF3R3K0000	S	3.3µH	AB
L 0314	VP-CF3R3K0000	S	3.3µH	AB
L 0315	VP-CF3R3K0000	S	3.3µH	AB
L 0316	VP-CF3R3K0000	S	3.3µH	AB
L 0317	VP-DF3R3K0000	S	3.3µH	AB
L 0318	VP-DF3R3K0000	S	3.3µH	AB
L 0501	VP-CF3R3K0000	S	3.3µH	AB
L 0502	RCILP0105CEZZ	S	Coil	AG
L 0503	VP-CF3R3K0000	S	3.3µH	AB
L 0504	VP-CF3R3K0000	S	3.3µH	AB
L 0505	VP-DF3R3K0000	S	3.3µH	AB
L 0601	VP-DF4R7K0000	S	4.7µH	AB
L 0602	RCILP0237BMZZ	S	150µH	AD
L 0603	RCILP0104CEZZ	S	Coil	AG
L 0604	RCILP0105CEZZ	S	Coil	AG
L 0605	RCILZ0599CEZZ	S	Delay Line	AG
⚠ L 0701	RCILF0111BMZZ	S	Main Filter	AL
L 2400	VP-DF3R3K0000	S	3.3µH	AB
T 0201	RCILD0238BMZZ	S	Adjust Coil	AE
CERAMIC FILTERS				
CF 0202	RFILC0020CEZZ	S	Filter 5.5 MHz (T5.5B)	AE
CF 0701	RFILC0121GEZZ	S	Filter 8MHz	AD
SF 0201	RFILC0275BMZZ	S	SAW Filter G1984T901	AK

63DS-03S
70DS-03S
70DS-05S

REF. NO.	PARTS NO.	★	DESCRIPTION	CODE
PWB	**C.R.T. SOCKET UNIT**			
	INTEGRATED CIRCUITS			
IC 0901	VHITDA6107Q-1	S	TDA6107Q	AM
	DIODES			
D 0901	RH-DX0501BMZZ	S	1N4004	AA
	COILS			
L 0901	RBLN-0037CEZZ	S	Ferrite Bead	AB
	CAPACITORS			
C 0901	VCEAGA2DW476M	S	47 200V Electrolytic	AE
C 0902	RC-KZ0023CEZZ	S	4700p 2KV Ceramic	AD
C 0904	RC-FZ7104BMNJ	J	0.1 400V Mylar	AD
C 0905	RC-FZ7104BMNJ	J	0.1 400V Mylar	AD
	MISCELLANEOUS PARTS			
⚠	QSOCV0103BMZZ	S	C.R.T. Socket	AG

REF. NO.	PARTS NO.	★	DESCRIPTION	CODE
	MISCELLANEOUS PARTS			
⚠	QACCZ2100BMSA	S	AC Cord	AR
	RCORF2096FFZZ	S	Ferrite (AC Cord)	AD
	RRMCG1061BMSA	S	Remote Control Unit	AW
	VSP1306PB067S	S	Speaker 12W	AR
	TINS-6482BMN0	S	Operation Manual 63/70DS03S	AP
	TINS-6492BMN0	S	Operation Manual 70DS05S	AY
	CABINET PARTS			
1	CCABA1193BMV0	S	Front Cabinet 63DS03S	
1	CCABA1182BMV0	S	Front Cabinet 70DS03S	BH
1	CCABA1177BMV0	S	Front Cabinet 70DS05S	BL
1 -1	GDORF1045BMSA	S	Door 63/70DS03S	AE
1 -1	GDORF1045BMSB	S	Door 70DS05S	AE
1 - 2	GMADT1067BMSA	S	Window 63/70DS03S	AG
1 - 2	GMADT1063BMSA	S	Window 70DS05S	AF
1 - 3	HBDGB3508BMSA	S	Badge SHARP 63DS03S	AH
1 - 3	HBDGB3013MESA	S	Badge SHARP 70DS03/05S	AG
1 - 4	JBTN-1028BMSA	S	Button Up/Down 63/70DS03S	AC
1 - 4	JBTN-1028BMSB	S	Button Up/Down 70DS05S	AC
1 - 5	JBTN-1029BMSA	S	Button Power 63/70DS03S	AC
1 - 5	JBTN-1029BMSB	S	Button Power 70DS05S	AC
1 - 6	HINDP5087BMSA	S	Indicator 63/70DS03S	AD
1 - 6	HINDP5089BMSA	S	Indicator 70DS05S	AE
2	CCABB1071BMV0	S	Rear Cabinet 63DS03S	
2	CCABB1062BMV0	S	Rear Cabinet 70DS03S	BB
2	CCABB1062BMV0	S	Rear Cabinet 70DS05S	BB